

This Listing of Claims will replace all prior versions, and listings, of claims in the application.

LISTING OF CLAIMS:

1. (Original) A method for provisioning in a computing utility infrastructure, the method comprising:

obtaining a Concrete Resource Model describing a desired resource structure; and  
using the Concrete Resource Model to generate at least one provisioning action to create a matching resource structure in the computing utility infrastructure.

2. (Currently Amended) A method as recited in claim 1, wherein the step of using the Concrete Resource Model includes executing at least one phase comprised of a matching step and a configuring step, wherein the steps of matching and configuring are repeated until the Concrete Resource Model is entirely matched with a set of at least one Resource Instance Service in a said knowledge subsystem describing resources and organization of resources in the computing facility infrastructure.

3. (Original) A method as recited in claim 2, wherein the step of matching includes mapping every node in a subset of nodes in the Concrete Resource Model to a Resource Instance Service in the knowledge subsystem, such that for every node in said subset, constraints on values of fixed attributes in said node are satisfied by the values of the same attributes in the corresponding Resource Instance Service, and the set of fixed relationships between matched

nodes matches the set of relationships between the corresponding Resource Instance Services.

4. (Original) A method as recited in claim 2, wherein the step of configuring includes:

- collecting provisioning actions to a provisioning action set;
- selecting a provisioning action having all preconditions satisfied;
- executing the provisioning action, and updating the knowledge subsystem with side effects of the provisioning action; and repeating the steps of selecting and executing until all provisioning actions whose preconditions are satisfied are executed.

5. (Original) A method as recited in claim 2, wherein the step of configuring includes selecting a provisioning action from a provisioning action set having at least one precondition not satisfied, finding a different action to satisfy said at least one precondition; and adding said different action to said provisioning action set.

6. (Currently Amended) A method as recited in claim 4, further comprising obtaining said side effects of said provisioning ~~an~~ action by at least one of:

- inspecting the definition of said provisioning action in said knowledge subsystem; and
- dynamically discovering the side effects once the action is executed by executing a discovery component.

7. (Currently Amended) A method as recited in claim 1, wherein the step of generating at least one provisioning action includes at least one task taken from a group of tasks consisting of:

creating a new service environment;  
changing a combination of resources allocated to the service environment;  
changing the configuration of resources allocated to a service environment; and  
destroying a service environment ; and  
any combination of these tasks.

8. (Original) A method as recited in claim 7, wherein changing the configuration of resources allocated to a service environment includes at least one of:

changing a local state of a resource; and changing a way the resource is configured to work with other resources.

9. (Original) A method as recited in claim 1, further comprising regenerating provisioning instructions whenever at least one of the following occurs:

infrastructure characteristics change; and  
requirements of the service change; and  
Provider's policy change.

10. (Original) A method as recited in claim 9, wherein infrastructure characteristics are taken from a group of characteristics consisting of:

types of resources in the infrastructure;  
capabilities of said resources;  
configuration of said resources constraints on a configuration of said resources; and

any combination of these characteristics.

11. (Original) A method as recited in claim 1, further comprising employing said Concrete Resource Model to generate a Resource Manager for a composite resource.

12. (Currently Amended) A method as recited in claim 1, wherein said concrete resource model ~~Resource Manager~~ provides a set of resource manager methods taken from a group of resource manager methods consisting of:

- creating composite resources based on a Concrete Resource Model;
- changing composite resources based on a Concrete Resource Model;
- destroying composite resources based on a Concrete Resource Model; and
- any combination of these resource manager methods.

13. (Original) A method as recited in claim 1, wherein the step of using is executed according to an execution specification.

14. (Currently Amended) A method as recited in claim 13[[1]], wherein said execution specification is taken from a group of execution specifications consisting of:

- execute immediately;
- stored and executed later at least once; and
- a combination of the above.

15. (Cancelled)

16. (Original) A program storage device readable by machine, tangibly embodying a program of instructions executable by the machine to perform method steps for provisioning in a computing utility infrastructure, said method steps comprising the steps of claim 1.

17. (Original) An apparatus for provisioning in a computing utility infrastructure, the apparatus comprising:

means for obtaining a Concrete Resource Model describing a desired resource structure;

and

means for using the Concrete Resource Model to generate at least one provisioning action to create a matching resource structure in the computing utility infrastructure.

18. (Original) A computer program product comprising a computer usable medium having computer readable program code means embodied therein for causing provisioning in a computing utility infrastructure, the computer readable program code means in said computer program product comprising computer readable program code means for causing a computer to effect the functions of claim 17.

19. (Currently Amended) A method as recited in claim 2, wherein said at least one phase is a Concrete Model Processing Engine phase, the Concrete Model Processing Engine phase, comprising:

receiving requests in the form of a Concrete Resource Model describing a desired resource structure; and

generating provisioning actions for reaching a state that satisfies the requirements specified in the Concrete Resource Model.

20. (Original) A method as recited in claim 1, wherein the steps of obtaining and using are performed by at least one user taken from a group of users consisting of:

a service provider;

an enterprise owning an infrastructure used for running at least one application;

a customer of a service provider;

a company owning an IT infrastructure; and

a utility provider.

21. (Original) A method as recited in claim 20, wherein at least one of said at least one user provides operational constraints dictating acceptable variations.